"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

USSR/Chemistry, Colloid - Rubber, Jul/Aug 52
Carbon Black

"Structure and Properties of Rubber Compositions Containing Fillers. IX. Modifications of Carbon Black Structures as a Result of Multiple Deformations," K. Pechkovskaya, Ts. Mil'man, B. Dogadkin, Sci Res Inst of the Tire Ind

"Kolloid Zhur" Vol XIV, No 4, pp 250-259

By measuring the elec resistance of various types of rubber (natural and synthetic) contg channel black, furnace black (Kosmos-40), burner black, or "thermic" black, detd the effect of mech stressing

225T12

of rubber on the carbon black structure. Established relationships between the data found and the properties of carbon black particles as detd from electron-microscopic, thermodynamic, chem, and other data.

225T12

MIL'MAN, TS.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, TS.M.; SIDEL'NIKOV, A.I.

Machine for rolling pipes. Suggested by TS.M.Mil'man, A.I.Sidel'nikov. Rats. i izobr. predl. v stroi. no.15:48-49 '60. (MIRA 13:9)

1. Rabotniki mekhanicheskoy masterskoy Kiyevskogo spetsializirovannogo upravleniya No.23 tresta Promtekhmontazh-2.
(Pipe, Steel)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

KUTYUMOV, P.S.; GAMIDZADE, G.A.; MIL'MAN, V.M.

Industrial production of "Azolate-A." Izv. vys. ucheb. zav.; neft' i gaz 3 no.12:121-123 '60. (MIRA 14:10)
(Benzenesulfonic acid)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, V.D.; MYSHKIS, A.D.

Random shocks in linear dynamic systems. Pribl. metod. resh. diff. urav. no.1:64-81 '63 (MIRA 18:2)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, D.P. (Odessa); MIL'MAN, V.D. (Khar'kov)

Geometry of inclusions with empty intersections. Structure of a unit sphere of nonreflexive space. Mat. sbor. 66 no.1:109-118 Ja '65. (MIRA 18:4)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, V.D.

Some properties of unconditional bases. Dokl. AN SSSR 162 no.2: 269-272 My '65. (MIRA 18:5)

1. Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR.
Submitted January 25, 1965.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

L 25907-66 EWT(d) IJP(c)
ACC NR: AP6011422 SOURCE CODE: UR/0020/66/167/004/0739/0742

27
B

AUTHORS: Kononenko, A. I.; Mil'man, V. D.

ORG: Physico-Technical Institute for Low Temperatures, Academy of Sciences, UkrSSR (Fiziko-tekhnicheskiy institut nizkikh temperatur Akademii nauk UkrSSR)

TITLE: Numerical method for finding asymptotically stable solutions to a system of ordinary differential equations

SOURCE: AN SSSR. Doklady, v. 167, no. 4, 1966, 739-742

TOPIC TAGS: ordinary differential equation, asymptotic property, numeric analysis

ABSTRACT: Asymptotically stable solutions are searched for the system of ordinary differential equations given by

$$dx/dt = f(t, x) \quad (f = (f_i)_{i=1}^n, \quad x = (x_i)_{i=1}^n). \tag{1}$$

The goal is to find the algorithm for the asymptotically stable solution in the domain G, or

$$x^0(t) \quad (\| x^0(t) \|^2 = \sum_{i=1}^n |x_i^0(t)|^2 < M). \tag{2}$$

The proof is carried out by showing that a Lyapunov function F(t,x) exists for the above system with the following properties: a) a continuous function $W_1(x)$ exists such that $W_2(x) \geqslant V(t, x) \geqslant W_1(x)$, where $W_2(x^0(t)) = 0, W_1(x) > 0$ at $x \neq x^0(t)$ (3)

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L 25907-66

ACC NR: AP6011422

and $W_1(x) \to \infty$ at $x \to \bar{G}/G$; b)

$$dV(t,x)/dt = \partial V/\partial t + (\mathrm{grad}_x V, f(t,x)) < -W_2(x) < 0 \text{ at } x \neq x^0(t); \quad (4)$$

and c) the function $V(t,x)$ has continuous partial derivatives in all the arguments uniformly bounded in t on each $H \subset G$. It is then proved by means of several theorems and lemmas that: a) if x^0 is asymptotically stable in all space of equation (1), then for any sequence

$$\{A_n\}_1^\infty \ (A_n \to \infty \text{ at } n \to \infty), \ \{S_n\}_0^\infty \text{ and } \{\alpha_n\}_0^\infty \ (\alpha_n \to 0 \text{ at } n \to \infty, \ \sum_{n=0}^{\infty} \alpha_n = \infty) \quad (5)$$

and for any initial point x_0 the algorithm

$$\mathfrak{A}_2(\{A_n\}_1^\infty; \ \{S_n\}_0^\infty; \ \{\alpha_n\}_0^\infty) \quad (6)$$

stabilizes at some stage j_0 and generates the sequence $\{x_n(j_0)\}_0^\infty$ converging to x^0; b) if x^0 is asymptotically stable in the uniformly bound domain

$$H_t = \{x: \Phi(t,x) \leqslant c\} \quad (7)$$

in t, such that $\Phi(t,x) = c$, then for any initial point $x_0 \in H_0$ and the sequence

$$\{S_n\}_0^\infty, \ \{\alpha_n\}_0^\infty \ (\alpha_n \to 0, \ \sum_{n=0}^{\infty} \alpha_n = \infty), \quad (8)$$

the algorithm

$$\mathfrak{A}_2(\Phi_c; \ \{S_n\}_0^\infty; \ \{\alpha_n\}_0^\infty) \quad (9)$$

stabilizes at some stage j_0 and generates the sequence $\{x_n(j_0)\}_0^\infty$ converging to x^0. This paper was presented by L. V. Kantorovich, academician, on 3 July 1965. Orig. art. has: 5 equations.

Card 2/2 BLG SUB CODE: 12/ SUBM DATE: 28Jun65/ ORIG REF: 002/ OTH REF: 001

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

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S/020/62/142/005/008/022
B112/B102

16.3400

AUTHOR: Mil'man, V. D.

TITLE: Transformation operator for Sturm-Liouville differential equations in the non-self-adjoint case

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 5, 1962, 1019-1021

TEXT: The author investigates transformation operators $V_{[LL_1hh_1]}$ which transform the solution $\omega_h(x,\lambda)$ of the boundary value problem $L[u] + \lambda^2 u \equiv u'' - q(x) + \lambda^2 u = 0$, $u'(0) = h$, $u(0) = 1$ into the solution $\omega_{h_1}(x,\lambda)$ of the boundary value problem $L_1[y] + \lambda^2 y \equiv y'' - q_1(x)y + \lambda^2 y = 0$, $y'(0) = h_1$, $y(0) = 1$. Such operators can be represented in the form

$$V[f] = f(x) + \int_0^x H(x,t)f(t)dt.$$

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Transformation operator for ...

Specially, the case $q_1(x) = 0$ is considered. The kernel H is constructed by means of the fundamental solution

$$y(x,\lambda) = e^{i\lambda x} + \int_0^\infty K(x,t)e^{i\lambda t}dt.$$

Reference is made to B. M. Levitan (UMN, 4, v. 1, 3 (1949)), A. Ya. Povzner (Matem. sborn., 23 (65), 1, 3 (1948)), and V. A. Marchenko (Tr. Moskovsk. matem. obshch., 1, 327 (1952), 2, 3 (1953)). B. Ya. Levin is thanked for assistance. There are 6 Soviet references.

PRESENTED: October 16, 1961, by S. L. Sobolev, Academician

SUBMITTED: September 27, 1961

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

L 20071-65 EWT(1) IJP(c)/ASD(a)-5 P/2519/64/000/005/0165/0170
ACCESSION NR: AT4049211

AUTHOR: Mil'man, V.D. (Khar'kov); Myshkis, A. D. (Khar'kov)

TITLE: Random shocks in linear dynamical systems

SOURCE: Polska Akademia Nauk. Instytut Podstawowych Problemow Techniki. Zagadnienia drgan nieliniowych, no. 5, 1964. Druga Konferencja Drgan Nieliniowych (Second Conference on Non-linear

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

Konferencja Drgań Nieliniowych (Nonlinear Conference on Vibrations), Warsaw, Sept. 18-21, 1962, 165-170

TOPIC TAGS: dynamical system, linear dynamical system, random shock, delta function

ABSTRACT: A linear dynamical system subjected to shocks and described by the equation

$$\frac{d\xi}{dt} = A\xi + \sum_{t_i<t} A_i\xi \cdot \delta(t-t_i), \quad \xi(t_0) = \xi^0.$$

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is considered, where the $\Delta_i\xi$ (i=1, 2, ...) are finite sudden variations in the solutions at the time t_i and δ is a delta function. The problem of boundedness of the solution of this equation was studied and the corresponding estimates were given on the assumption of an a priori estimate of the amplitude of shocks $\Delta_i\xi$ in a previous article by V.D. Mil'man and A.D. Myshkis (On the stability of motion in the presence of shocks. Sib. mat. zh-1, vol. 1, no. 2, 1960,233-237). The aim of this article is to carry out a probabilistic study of the behaviour of the trajectories of the system under the assumption that the shocks do not occur too frequently, their amplitudes are not, in general, small, and the solutions

$$\frac{d\xi}{dt} = A\xi$$

are asymptotically stable. The concepts of weak convergence and strong convergence were introduced for the comparison of weak trajectories.

ASSOCIATION: Fiziko-tekhnicheskiy institut nizkikh temperatur, AN UkrSSR, Khar'kov (Physicotechnical Institute of Low Temperatures,

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L 20071-65
ACCESSION NR: AT4049211

Academy of Sciences UkrSSR)

SUBMITTED: 03Dec62 ENCL: 00 SUB CODE: ME, MA

NO REF SOV: 003 OTHER: 001

Card 3/3

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, V.D. (Khar'kov)

Transformation operator for Sturm-Liouville differential equations in the non-self-adjoint case. Mat. sbor. 59 (dop.):145-164 '62. (MIRA 16:6)
(Operators (Mathematics)) (Differential equations)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, V.D.; MYSHKIS, A.D.

Stability of motion in the presence of shocks. Sib. mat. zhur. 1 no.2:233-237 Jl-Ag '60. (MIRA 13:12)
(Mathematical physics)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, D.P.; MIL'MAN, V.D.

Some geometric properties of nonreflexive spaces. Dokl. AN SSSR 152 no.1:52-54 S '63. (MIRA 16:9)

1. Odesskiy elektrotekhnicheskiy institut svyazi i Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR. Predstavleno akademikom S.L.Sobolevym.

(Banach spaces)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, V.D.

Perturbations of sequences of elements of a Banach space. Sib. mat.zhur. 6 no.2:398-412 Mr-Ap '65.

(MIRA 18:5)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, D.P. (Odessa); MIL'MAN, V.D. (Khar'kov)

Some properties of nonreflexive Banach spaces. Mat. sbor. 65 no.4:486-497 D '64. (MIRA 18:3)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

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B156/B101

11.0122

AUTHORS: Mamedov, M. A., Gamid-Zade, G. A., Mil'man, V. M.

TITLE: Alkylation of toluene with the propane-propylene fraction of catalytic cracking gas

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1962, 534, abstract 13M216 (Novosti neft. i gaz. tekhn. Neftepererabotka i neftekhimiya, no. 10, 1961, 7-10)

TEXT: Experiments on the alkylation of coal-tar toluene, using the propane-propylene fraction of catalytic cracking gas in the presence of dehydrated $AlCl_3$ as catalyst, were carried out at atmospheric pressure in a laboratory apparatus in order to determine the ideal yield of the alkylate produced, and its anti-detonation properties. It was established that the ideal conditions for formation of the required 120-180°C fraction are: temperature 75°C, toluene: propylene: $AlCl_3$ molecular ratio 1:0.5:0.035, contact period 0.64 min. Under these conditions the yield of the fraction was: 206.3 % with respect to propylene, 106.4 % with respect

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B156/B101

Alkylation of toluene with the...

to reacted toluene. The octane number of the 120-180°C fraction was 99.8, and with 3.3 g of tetraethyl lead it was 105.2. The fraction obtained can be used as a high-octane component of gasoline, also as a raw material for petrochemical synthesis. [Abstracter's note: Complete translation.]

Card 2/2

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Ya. V., Docent Cand. Tech. Sci.

Dissertation: "Concerning Selection of Voltage for Power and Lighting Lines of Textile Plants." Moscow Inst of Engineering Economics imeni Sergo Ordzhonikidze, 30 May 47.

SO: Vechernyaya Moskva, May, 1947 (Project #17836)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, YA. V.

RT-1662 (Scientific and technical session on electric drives in the textile industry) Nauchno-tekhnicheskaia sessiia po elektroprivodu v tekstil'noi promyshlennosti. ELEKTRICHESTVO, (12): 85-85, 1950

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Ya.V.; PETROV, I.A. [authors]; BYSTROV, A.M., dotsent, kandidat tekhnicheskikh nauk [reviewer].

"Automatic electric drives of textile machinery." IA.V.Mil'man, I.A.Petrov. Reviewed by A.M.Bystrov. Elektrichestvo no.11:93-94 N '53. (MLRA 6:10)

1. Ivanovskiy energeticheskiy institut im. Lenina (for Bystrov).
(Electric driving) (Textile machinery)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Yakov Vladimirovich; PETROV, Ivan Arsen'yevich; SHVYREV, S.S., kandidat tekhnicheskikh nauk, retsenzent; LIOZNOV, A.G., redaktor; NEKRASOVA, O.I., tekhnicheskiy redaktor

[Automatic electric drive for textile machinery] Avtomatika elektroprivoda tekstil'nykh mashin. Izd. 2-oe, perer. i dop. Moskva, Gos. nauchno-tekhn. izd-vo Ministerstva legkoi promyshl. SSSR, 1956. 391 p. (MLRA 9:10)

(Automatic control)
(Textile machinery--Electric driving)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

LESHCHENKO, Vasiliy Germanovich; MIL'MAN, Yakov Vladimirovich; KUKHNOV, D.A., kand. tekhn. nauk, retsenzent; KUBAREV, V.I., inzh., red.; TAIROVA, A.L., red. izd-va; GORDEYEV, L.P., tekhn. red.

[Pneumatic systems for textile machinery] Pnevmaticheskie ustroistva tekstil'nykh mashin. Moskva, Mashgiz, 1962. 150 p. (MIRA 15:4)

(Textile machinery) (Pneumatic machinery)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Yakov Vladimirovich; SHVYREV, Sergey Sergeyevich; DOMANITSKIY, S.M., kand. tekhn.nauk, dots., retsenzent; MAYZEL', M.M., doktor tekhn. nauk, prof., retsenzent; SOKOLOVA, V.Ye., red.

[Fundamentals of the automation of technological processes in the textile industry] Osnovy avtomatizatsii tekhnologicheskikh protsessov v tekstil'noi promyshlennosti. Moskva, Izd-vo "Legkaia industriia," 1964. 389 p. (MIRA 17:6)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Ya.V., kand. tekhn. nauk

Brief information on foreign technology. Tekst. prom. 24 no.4: 87 Ap '64.

Review of the book "Automatically controlled electric driving of textile machinery." Tekst. prom. 24 no.4:89-90 Ap '64. (MIRA 17:9)

1. Zaveduyushchiy kafedroy avtomatiki Moskovskogo tekstil'nogo instituta.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MAYZEL', Maks Mikhaylovich; MIL'MAN, Ya.V., red.

[Fundamentals of automatic control and automation of industrial processes] Osnovy avtomatiki i avtomatizatsii proizvodstvennykh protsessov. Izd.2., sokr. i perer. Moskva, Vysshaia shkola, 1964. 579 p. (MIRA 17:8)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Ya.V.; LESHCHENKO, V.G.; SMAGORINSKIY, A.B., inzh., retsenzent; BLAGOSKLONOVA, N.Yu., inzh., red.

[Automated electrical drives of the machinery of synthetic fiber factories] Avtomatizirovannyi elektroprivod mashin zavodov sinteticheskogo volokna. Moskva, Mashinostroenie, 1965. 195 p. (MIRA 18:10)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

REBARBAR, Ya.M.; KHAVKIN, V.P.; VINTER, Yu.M.; MIL'MAN, Ya.V.

Selecting the optimum parameters of the mechanism for automatic jacquard card punching. Izv. vys. ucheb. zav.; tekh. tekst. prom. no.2:121-126 '65. (MIRA 18:5)

1. Moskovskiy tekstil'nyy institut, Vsesoyuznyy nauchno-issledovatel'skiy institut legkogo i tekstil'nogo mashinostroyeniya i TSentral'nyy nauchno-issledovatel'skiy institut promyshlennosti lubyanykh volokon.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

NEFEDOV, A.A.; BREZHNEV, L.A.; SICHEVOY, A.P.; BYSTRIKOV, O.P.; MIL'MAN, Ye.A.

Studying the deformation of metal transverse helical rolling. Stal' 24 no.5:429-432 My '64. (MIRA 17:12)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i Dneprovskiy metallurgicheskiy zavod im. Dzerzhinskogo.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

SICHEVOY, A.P.; MATOVSKIY, S.M.; SAVINTSEV, R.I.; MIL'MAN, Ye.A.

Transverse helical rolling and the application of round periodic sections. Kuz.-shtam.proizv. 7 no.2:11 F '65. (MIRA 18:4)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Yu., inzhener.

Grain storage at procurement points in Kiev Province. Muk.-elev.prom. 20 no.2:10-11 F '54. (MLRA 7:7)

1. Kiyevskaya kontora Zagotzerno.
(Kiev Province--Grain--Storage) (Grain--Storage--Kiev Province)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

1. A. K. BUTYLENKO, V. M. DANILENKO, YU V. MIL'MAN, YU V. NAYDICH, S.A. RYBAK, A. A. SMIRNOV

2. USSR (600)

4. Alloys

7. Electrical resistance of well-organized alloys. Zhur. eksp. i teor. fiz. 23 no. 6. 1952

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

M.L'MAN, Yu.V.

Theory of electrical resistivity of ordered alloys. A. K. Butylenko, V. M. Danilenko, Yu. V. Mil'man, Yu. V. Naidich, S. A. Rybak, and A. A. Smirnov. *Invest. Kiev. Politekh. Inst.* 12, 18–24(1953); *Referat. Zhur., Fiz.* 1955, No. 9374; cf. *C.A.* 47, 3644e.—Exptl. curves illustrating the relation of elec. resistivity of ordered alloys ρ to compn. and degree of ordering differ from theoretical curves by the presence of rectilinear sections, by sharpness of the max., and in some cases by the rapid discontinuous changes of ρ with compn. If one considers that, at the same temp. for annealing T, the degree of ordering η, attained by alloys of different concns., is not the same, then the exptl. curves can be explained with the aid of known formulas detg. the equil. values of η at given values of T and c (concn.). The favorable effect of the indicated correction is illustrated graphically by a sample of alloys with face-centered and body-centered cubic lattices. It is noted that the skipping of $\rho(c)$ which is sometimes observed when compn. $c = 0.5$ is approached contradicts the statistical theory of ordering, which is not able to predict whether the order—non-order transitions in a given alloy are of 1st or 2nd order. This work confirms the usefulness of A. A. Smirnov's theory (*C.A.* 42, 8605*f*) in explaining the basic qual. features of change in ρ with the compn. which are observed in ordered alloys.—M. K.

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Yu.V.; TREFILOV, V.I.

Cold brittleness temperature of metals with a volume-centered cubic lattice. Sbor. nauch. rab. Inst.metallofiz. AN URSR no.16:16-21 '62. (MIRA 16:5)
(Metals—Brittleness) (Crystal lattices)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

S/601/62/000/016/002/029
E111/E451

AUTHORS: Mil'man, Yu.V., Trefilov, V.I.

TITLE: Contribution on the brittle transition temperature of metals with a body-centered cubic lattice

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut metalofyzyky. Sbornik nauchnykh rabot. no.16. Kiev, 1962. Voprosy fiziki metallov i metallovedeniya. 16-21

TEXT: The authors apply a mathematical treatment of dislocation theory to calculate the brittle transition temperature Tx for low-carbon steel and cast molybdenum. Their results agree well with experimental results for both materials. However, for considerably smaller block sizes calculated results are low. An increase in the speed of deformation from 10^{-4}sec^{-1} to 10^{2}sec^{-1} causes Tx to rise, the absolute increase (which can exceed 200°C) being much greater for molybdenum than for iron. This explains the profound effect of test conditions on the Tx values for molybdenum and the fact that its notch sensitivity is higher than that of steel. A decrease in grain size reduces Tx more in molybdenum than in steel; decrease in substructure size and

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Contribution on the brittle ...

increase in dislocation density reduces Tx for both materials. It is confirmed that by varying the substructure it should be possible to vary the transition temperature over a wide range. There are 2 figures and 2 tables.

SUBMITTED: January 27, 1962

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

TREFILOV, V.I.; MIL'MAN, Yu.V.

Mechanism of the plastic deformation of bismuth and antimony. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.17:32-44 '63.

Mechanism of the plastic deformation of bismuth and antimony. Ibid.:45-49 (MIRA 17:3)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

TREFILOV, V.I.; MIL'MAN, Yu.V.

Characteristics of the plastic deformation of crystals with covalent bonds. Dokl. AN SSSR 153 no.4:824-827 D '63. (MIRA 17:1)

1. Institut metallofiziki AN UkrSSR. Predstavleno akademikom G.V. Kurdyumovym.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Yu.V.; TREFILOV, V.I.

Nature of the "yield tooth." Sbor.nauch.trud. Inst.metallofiz. AN URSR no.19:46-50 '64. (MIRA 18:5)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

L 33335-65 EEC(b)-2/EWA(h)/EWP(j)/EWA(c)/EWT(l)/EWT(m)/EWP(b)/T/EWP(t) Pc-4/
Pz-5/Peb LJP(c) AT/RM/JD
ACCESSION NR: AT5005114 S/2601/64/000/019/0051/0053

AUTHOR: Mil'man, Yu. V.; Trefilov, V. I.; Khomenko, G. Ye.

TITLE: The electromechanical effect in covalent crystals as a function of temperature

SOURCE: AN UkrSSR. Institut metallofiziki. Sbornik nauchnykh trudov, no. 19, 1964. Voprosy fiziki metallov i metallovedeniya (Problems in the physics of metals and physical metallurgy), 51-53

TOPIC TAGS: indium antimonide, silicon, germanium, electromechanical effect, semiconductor

ABSTRACT: The electromechanical effect discovered by Westbrook and Gilman consists of a sharp drop in the microhardness of several crystals with covalent bonds (Si, Ge, InSb,etc.) when an electric current is passed through the specimen during measurement. In many cases, this drop in hardness amounts to 50-60% independently of the conductivity type of the crystal (*n*- or *p*- type). The electromechanical effect increases with an increase in the current density j, but reaches saturation at some point, e.g. the saturation point for Ge is 100 a/m^2. This is a surface

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ACCESSION NR: AT5005114

effect, acting only at distances of 2-3 μ from the surface. It has been established that passing a current through the specimen generates the same effects as are observed when it is illuminated by light of a definite wavelength. The authors of this article had previously studied the effect of temperature on the microhardness of Si, Ge and InSb in a wide temperature range as well as the movement of dislocations at various temperatures in these crystals. It was shown that below some temperature T_{cr} the hardness is weakly dependent on the temperature and that the dislocations are nearly stationary. When the temperature is raised above T_{cr}, the hardness falls sharply while the rate of motion of the dislocations increases. For all crystals studied, $T_{cr} \approx 0.4\ T_m$ where T_m is the melting point in °K. A comparison of these results with the data on the relationship between temperature and the electromechanical effect obtained by Westbrook and Gilman (J. H. Westbrook, J. J. Gilman, Journ. Appl. Phys., 1962, 33, 7, 2360) provided a basis for assuming that the electromechanical effect takes place only at temperatures below T_{cr}. In order to verify this hypothesis, the electromechanical effect in an InSb monocrystal was studied since its T_{cr} lies in the room temperature range and it lends itself most easily to testing above and below T_{cr}. The results are presented in graphic form. It is found that the electromechanical effect takes place only below T_{cr}, the effect being greater the lower the temperature. At temperatures above T_{cr}, where

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ACCESSION NR: AT5005114

there is considerable dislocation mobility, there is no electromechanical effect. Thus this effect is observed in covalent crystals only when the dislocations in these crystals are "frozen." Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 08Jul63 ENCL: 00 SUB CODE: SS

NO REF SOV: 003 OTHER: 002

Card 3/3

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

L 41559-65 EWT(m)/EWP(w)/EPF(n)-2/EWG(m)/EWA(d)/EPR/T/EWP(t)/EWP(b)/EWA(c)
ACCESSION NR: AT5008867 Ps-4/Pu-4 S/2601/64/000/020/0003/0024
IJP(c) JD/JG

AUTHOR: Mil'man, Yu. V.; Rachek, A. P.; Trefilov, V. I.

TITLE: Investigation of the mechanism of deformation and brittle failure of transition-metal alloys on a VI A-group base

SOURCE: AN UkrSSR. Institut metallofiziki. Sbornik nauchnykh trudov, no. 20, 1964. Voprosy fiziki metallov i metallovedeniya (Problems in the physics of metals and physical metallurgy), 3-24

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

(Problems in the physics of metals and physical metallurgy), 3-24

TOPIC TAGS: chromium alloy, iron containing alloy, tungsten alloy, rhenium containing alloy, nil ductility temperature, brittle failure mechanism, slip mechanism, twinning mechanism

ABSTRACT: The mechanism of the action of alloying elements on the cold brittleness temperature of alloys and the role of twinning in the observed decrease in the NDT temperature have been investigated in 99.988%-pure chromium and chromium alloys containing up to 53.2 at% Fe and in pure tungsten and tungsten alloys containing 10 and 25 at% Re. The temperature dependence of the yield strength

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of the alloys was determined by microhardness measurements ...

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L 41559-65
ACCESSION NR: AT5008867

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peratures ranging from -253 to +800C. The cold brittleness and the plastic deformation with slip and with twinning were investigated with static bend tests. When the temperature of the beginning of twinning at which the plastic deformation mechanism experiences the slip-to-twinning transition (T_d) is higher than the NDT temperature, the latter decreases sharply with a further increase in the iron content of the alloys. Similarly, in W-Re and Mo-Re alloys, an addition of rhenium raises the T_d and lowers the NDT temperature in the twinning region, changing significantly the plastic deformation mechanism. In all the investigated alloys, a wider temperature range of cold brittleness is observed at higher NDT temperatures and vice versa. This is probably because at low NDT temperatures the brittleness appears in the region where the yield strength is highly temperature-dependent, whereas at high NDT temperatures the temperature dependence of the yield strength is very slight. This phenomenon seems to be common for the b.c.c. lattice of refractory metals. Orig. art. has: 16 figures and 13 formulas. [MS]

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

L 41559-65

ACCESSION NR: AT5008867

ASSOCIATION: Institut metallofiziki AN UkrSSR (Institute of Metal Physics, AN UkrSSR)

SUBMITTED: 20Jan64	ENCL: 00	SUB CODE: MM
NO REF SOV: 019	OTHER: 059	ATD PRESS: 3234

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

L 41581-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) Pf-4
ACCESSION NR: AT5008868 IJP(c) JD/HW/JG S/2601/64/000/020/0025/0031

34
33
B+1

AUTHOR: Gridnev, V. N. (Corresponding member AN UkrSSR); Ivashchenko, R. K.; Mil'man, Yu. V.; Trefilov, V. I.

TITLE: Ductility of chromium alloyed with yttrium

SOURCE: AN UkrSSR, Institut metallofiziki. Sbornik nauchnykh trudov, no. 20, 1964. Voprosy fiziki metallov i metallovedeniya (Problems in the physics of metals and physical metallurgy), 25-31

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

TOPIC TAGS: chromium, chromium alloy, yttrium alloy, microhardness, alloy microstructure, alloy ductility, alloy strength, plastic deformation effect

ABSTRACT: The effect of yttrium additions of 0.5, 1.0, or 2.0% on the ductility of 0.02%-pure electrolytic chromium has been investigated. Yttrium additions, particularly 0.5—1.0%, appreciably decreased the hot microhardness of alloys in the as-cast condition and raised the NDT temperature in static bend tests from -30C for pure chromium to -10C for an alloy with 1% Y. Microscopic examination showed a network of precipitated impurities along the grain boundaries

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of alloyed chromium which caused an increase in NDT temperature, notwithstanding a decrease in hardness. Hot extrusion with a reduction of 92% fragmented the precipitation network, and subsequent

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with 1% Y to -20 to -30C. Additional plastic deformation (drawing or rolling) at temperatures below the recrystallization temperature lowered the NDT temperature still further. The lowering of the NDT temperature can be ascribed to changes in the structure manifested by a substantial elongation of the grains, to changes in the substructure manifested by a significant strengthening of the deformed metal, and to the development of deformation aging processes. Thus, cold plastic deformation (below the recrystallization temperature) substantially lowered the NDT temperature of Cr-Y alloys and simultaneously increased their strength. Orig. art. has: 7 figures.

[MS]

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SUBMITTED: 20 JAN 64

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Yu.V.; TREFILOV, V.I.

Temperature of cold brittleness. Ukr. fiz. zhur. 9 no.7:792-794 Jl '64. (MIRA 17:10)

1. Institut metallofiziki AN UkrSSR, Kiyev.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

GRIDNEV, V.N.; IVASHCHENKO, R.K.; MIL'MAN, Yu.V.; TREFILOV, V.I.

Plasticity of chromium alloyed with yttrium. Sbor. nauch. trud. Inst. metallofiz. AN URSR no.20:25-31 '64. (MIRA 18:5)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'MAN, Yu.V.; TREFILOV, V.I.

Paramagnetic susceptibility of alloys on the basis of chromium. Ukr. fiz. zhur. 9 no.7:794-795 Jl '64. (MIRA 17:10)

1. Institut metallofiziki AN UkrSSR, Kiyev.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

TREFILOV, V.I., MIL'MAN, Yu.V.

Determination of the microhardness of metals at low temperatures under a layer of cooling liquid. Zav.lab. 30 no.4:484-485 '64. (MIRA 17:4)

1. Institut metallofiziki AN UkrSSR.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

L 24469-66 EWT(m)/ETC(f)/EPF(n)-2/EWG(m)/T/EWP(t) IJP(c) JD/JG/GS
ACC NR: AT6010572 (N) SOURCE CODE: UR/0000/65/000/000/0029/0041

AUTHOR: Mil'man, Yu. V.; Rachek, A. P.; Trefilov, V. I.; Udovenko, A. A.; Firstov, S. A.; Yaremchuk, V. V.

ORG: Institute of Physics of Metals AN UkrSSR (Institut metallofiziki AN UkrSSR)

TITLE: Mechanism of plastic deformation in alloys of transition metals

SOURCE: AN UkrSSR. Mekhanizm plasticheskoy deformatsii metallov (Mechanism of the plastic deformation of metals). Kiev, Naukova dumka, 1965, 29-41

TOPIC TAGS: plastic deformation, cast alloy, phase transition, twinning, material fracture

ABSTRACT: The paper is a continuation of a previous work (Mil'man, Yu. V., Trefilov, V. I., Rachek, A. P., "Problems in the Physics and Science of Metals, 20", *Naukova dumka*, Kiev, 1964) devoted to the mechanism of plastic deformation and brittle fracture of alloys of elements in group VIA with other transition metals. The following alloy systems are studied: Cr-Mn, Cr-Ru, Cr-Fe, Cr-Os, W-Re, Mo-Re, Nb-Re and Mo-Ti. The alloys were studied in the cast state and in some cases were subjected to heat

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L 24469-66
ACC NR: AT6010572

3

treatment. The relationship between the packing flaw energy and the electronic structure of the alloy is analyzed. It is shown that both transition and nontransition metals conform to the Seger rule on high energies for packing defects in metals. The twinning ≠ slipping transition in alloys of transition metals is studied. All alloys of elements in group VIA with metals in groups VIIA and VIIIA show a transition to twinning, while alloys with elements in group VIA (Mo-Ti alloys) show no twinning throughout the entire region of solid solutions with a bcc lattice under maximum loads. Experimental data show that alloying chromium, molybdenum and tungsten with metals of groups VIIA and VIII reduces the packing flaw energy and causes a transition to deformation by twinning (or to combined deformation by slipping and twinning). A brief survey of the literature shows no transition to twinning in alloys of group VIA with transition metals to the left of the chromium group in the periodic table. Orig. art. has: 8 figures.

SUB CODE: 11/ SUBM DATE: 14Nov64/ ORIG REF: 003/ OTH REF: 026

Refracting metals

27

Card 2/2 dda

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

L 41026-66 EWT(m)/EWP(k)/T/EWP(t)/ETI LIP(c) JD/HW/JG/GD

ACC NR: AT6009600 (N) SOURCE CODE: UR/000/65/000/000/0101/0111

AUTHOR: Gridnev, V. N.; Ivashchenko, R. K.; Mil'man, Yu. V.; Trefilov, V. I.; Firstov, S. A.

57
53
B+1

ORG: Institute of Metal Physics, AN UkrSSR (Institut metallofiziki AN UkrSSR)

TITLE: Investigation of the effect of highly active elements on the plasticity of chromium

SOURCE: AN UkrSSR. Fizicheskaya priroda khrupkogo razrusheniya metallov (Physical nature of brittle failure of metals). Kiev, Izd-vo Naukova dumka, 1965, 101-111

TOPIC TAGS: chromium, plasticity, metal aging, yttrium, rare earth element

ABSTRACT: The article deals with the refining of chromium by treatment with highly active elements which react with the interstitial impurities in Cr to form more stable compounds than the corresponding Cr compounds. To this end, the use of Y and other rare-earth elements is particularly promising since then it is often possible to improve not only the plasticity but also the high temperature strength of the alloy. However, there is no common consensus on this effect of Y and rare-earth elements. Thus, O. N. Carlson et al. (Less Common Metals, 1964, 6, 6, 439) present experimental findings indicating that the temperature of cold brittle-

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ness of cast Cr increases when it is treated with Y and other rare-earth elements. To clear up this contradiction, specimens of Cr treated with Y as well as of pure Cr in soldered and evacuated ampoules were annealed at 1200°C for 1 hr and water-quenched. By means of Vickers hardness tests, aging of these specimens was investigated at three temperatures (275°, 350° and 400°C) in a molten-tin bath. The findings on the increase in microhardness with aging are presented in Fig. 1, where each point represents the mean of 8-10 measurements. Fig. 1

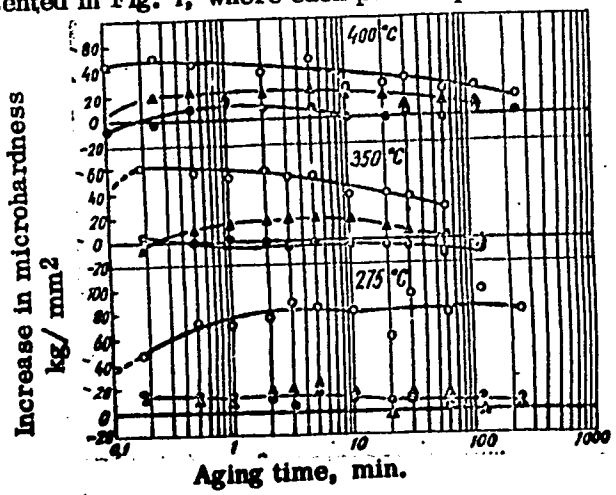

Fig. 1. Effect of treatment with Y and Pr on the aging of Cr:

○ - zone-refined Cr; ● - alloy of Cr + 1% Y; △ - alloy of Cr + 1% Pr

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indicates that the addition of Y virtually suppresses the processes of aging in the alloy (and hence also it suppresses the rise in the temperature of cold brittleness due to the segregation of an interstitial impurity -- nitrogen -- from the solid solution). These findings confirm the feasibility of using Y to improve the refining of Cr, since Y binds the greater part of nitrogen into nitrides, thus suppressing most of the effects of aging. Further tests, involving the treatment of Cr with microamounts of Y and Pr over a broad temperature range: from the temperature of liquid hydrogen to +900°C, showed, that such treatment enhances the microhardness of Cr at elevated temperatures. Orig. art. has: 5 figures.

SUB CODE: 13, 11, 20/ SUBM DATE: 12Oct64/ ORIG REF: 005/ OTH REF: 026/

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

L 04183-67 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG/GD
ACC NR: AT6026909 SOURCE CODE: UR/0000/66/000/000/0056/0062

AUTHOR: Belous, O. A.; Gridnev, V. N.; Yefimov, A. I.; Mil'man, Yu. V.; Trefilov, V. I.

60
56
8

ORG: none

TITLE: The effect of annealing temperature on Q^{-1} and G-purity chromium and alloys of chromium with yttrium and gadolinium

SOURCE: AN SSSR. Institut metallurgii. Vnutrennoye treniye v metallakh i splavakh (Internal friction in metals and alloys). Moscow, Izd-vo Nauka, 1966, 56-62

TOPIC TAGS: internal friction, annealing, temperature dependence, chromium, high purity metal, yttrium, gadolinium, metallographic examination, grain structure, dislocation effect

ABSTRACT: The effect of annealing temperature on temperature dependent internal friction was studied in zone melted chromium, Cr + 1% Y, and Cr + 1% Gd. Wire samples of 0.8 mm diameter were drawn at 300°C to about 95%. These wires were annealed before testing for 1 hr at temperatures ranging from 100 to 1100°C. At low testing temperatures the internal friction in the pure chromium was twice as low as that in the alloys. In all cases, the internal friction decreased as a function of annealing temperature; in zone refined chromium, the internal friction dropped from $15 \cdot 10^{-4}$ to $5 \cdot 10^{-4}$ after annealing to 300°C; in Cr + 1% Y, the internal friction decreased at 50°C after

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annealing up to 600°C. These changes were partially caused by the redistribution of interstitial impurities during annealing. Transmission electron microscopy showed that the density and distribution of dislocations did not change after annealing up to 400°C. Thus in the alloys the internal friction decrease was caused by polygonization. Microstructures did not show any differences between pure chromium and the alloys that would account for the internal friction recovery. At high testing temperatures, the internal friction increased sharply due to grain boundary relaxation. The rise in internal friction at high temperatures was the same for all of the metals. The shift in initial rise of internal friction with annealing was caused by a decrease in both dislocation density and grain boundary area. After annealing at similar temperatures, the value of internal friction was highest in the alloys, due to the retardation of recrystallization by alloying. In the 300-600°C temperature range, the change in Q^{-1} was caused by polygonization in Cr + 1% Y (the recrystallization temperature of Cr-Y is above 800°C), while in pure chromium above 600°C it was due to recrystallization. Internal friction peaks occurred at 900°C in pure chromium at an oscillation frequency of 2.8 cps. In Cr + 1% Gd a similar grain boundary peak occurred at 960-970°C at a frequency of 2.1 cps. In Cr + 1% Y the peak was not observed because alloying with yttrium raised the peak into a higher temperature range. The temperature dependence of the square of the frequency is proportional to the shear modulus. Deviations from linearity were observed in the same temperature range where the sharp rise in Q^{-1} was observed. This change in shear modulus was caused by grain boundary relaxation and lat-

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ACC NR: AT6026909

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tice inhomogeneity. The authors express their gratitude to V. G. Epifanov of the Institute of Metal Physics, AN UkrSSR for supplying the zone melted chromium, produced by three zone passes. Orig. art. has: 4 figures.

16

SUB CODE: 11,20/ SUBM DATE: 02Apr65/ ORIG REF: 011/ OTH REF: 008

Card 3/3 ZC

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

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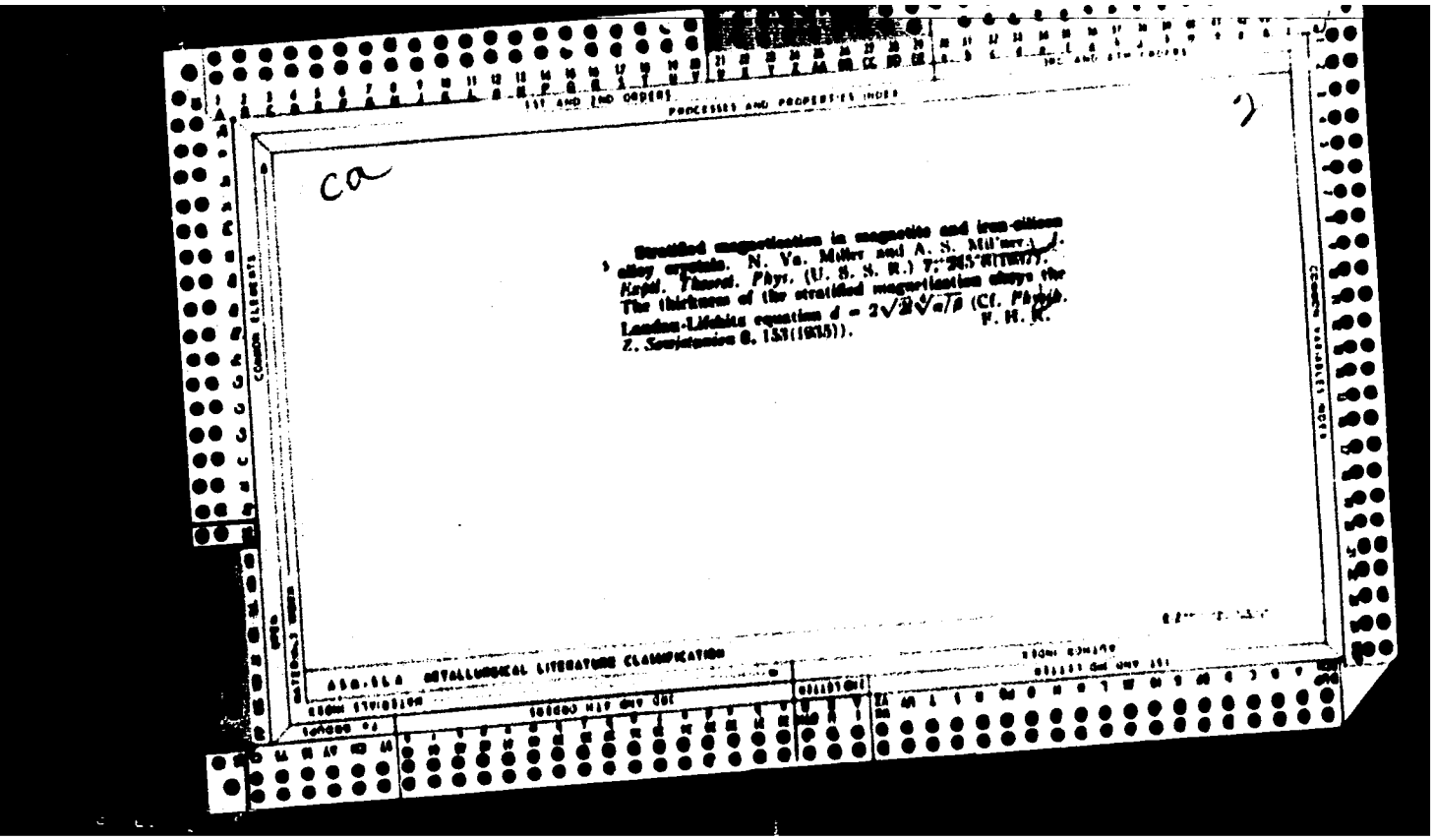

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, A. S.

Mil'ner, A. S. - "Magnetic striction of ferromagnets which have suffered thermo-magnetic treatment"m Uchen. zapiski Khar'k. gos. un-ta im. Gor'kogo, Vol. XXVII, Trudy Fiz. otd-niya Fiz.-matem. fak., Vol. I, 1948, p. 47-49, - Bibliog: 5 items.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 8, 1949).

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, A.S.

MIL'NER,A.S.; KIRICHENKO,O.P.

Dependence on temperature for the electric resistance of ferrites.
Dop. AN URSR no.3:258-260 '55. (MLRA 8:11)

1. Kharkivs'kiy derzhavniy universitet. Predstaviv diysniy chlen Akademii nauk URSR K.D.Sinel'nikov
(Ferromagnetism)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

AMITIN, Ye.B.; MIL'NER, A.S.; KHOTKEVICH, V.I.

Determination of small quantities of ferromagnetic admixtures in weak magnetic compositions. Zav.lab.21 no.6:693-695 '55. (MLRA 8:9)

1. Khar'kovskiy gosudarstvennyy universitet im. A.M.Gor'kogo
(Ferromagnetism)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, A.S.

VERKIN, B.I.; MIL'NER, A.S.; ROZENTSVEYG, L.N.; FAYNBERG, Ya.B.; KHOTKEVICH, V.I.; SHKLYAREVSKIY, I.N.

Sections of Experimental, Theoretical, and General Physics at the Department of Physics and Mathematics, 1930-1955. Uch.zap.KHGU 60:63-79 '55. (MIRA 10:1)

(Kharkov University--History)
(Physics)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310(

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SOV/137-57-6-10732

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 188 (USSR)

AUTHORS: Mil'ner, A.S., Polyakova, N.L.

TITLE: The Curie Point in Thin Ferromagnetic Films (Tochka Kyuri v tonkikh plenkakh ferromagnetikov)

PERIODICAL: Uch. zap. Khar'kovsk. un-t, 1955, Vol 64, pp 159-165

ABSTRACT: The Curie point θ was determined on Ni films (F) $1.17 \cdot 10^{-6}$ to $6.95 \cdot 10^{-6}$ cm thick and 2.7x2 cm^2 in area, applied onto glass by volatilization under vacuum, by measuring the relative variation of the magnetic moment of the F in a constant magnetic field upon an increase in temperature on a special instrument. In spite of the fact that the points obtained experimentally do not lie on the theoretical curve obtained by Klein and Smith (Klein and Smith, Phys. Rev., 1951, Nr 81, pp 378-380), $I_s/I_o = f(T/\theta)$, where I_s is the intensity of the technical saturation magnetization, I_o is the true magnetization, θ in thin F is lower than in thick ones; the decrease of θ becomes noticeable at $3 \cdot 10^{-6}$ cm thicknesses and less.

L.P.

Card 1/1

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MIL'NER, A.S.

USSR/Magnetism - Ferrites F-6

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 12024

Author : Karolevskaya, N.S., Mil'ner, A.S.

Inst : Khar'kov University imeni A.M. Gor'kiy.

Title : Magnetic Properties of Magnetite at Low Temperatures

Orig Pub : Fiz. metallov i metallovedeniye, 1956, 3, No 1, 186-188

Abstract : A study was made of the effect of the temperature, at which the magnetic field (H) is turned on during the cooling of magnetite, on the temperature of the $\beta \rightarrow \alpha$ transition, and on the value of the magnetization intensity that occurs upon this change. It is observed that turning H on at temperatures above 120° K gives the same result (the magnetization increases by 10%). Different results, but results that are in agreement with each other, are obtained by turning H on at temperature below

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, A.S.; FEODOS'YEVA, K.V.

Magnetic method for determining diffusion in metals. Fiz.met. i metalloved. 3 no.3:483-485 '56. (MIRA 10:3)

1. Khar'kovskiy gosudarstvennyy universitet imeni A.M. Gor'kogo.
(Diffusion) (Metals--Magnetic properties)

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MIL'NER, A.S.

USSR / Magnetism. Ferromagnetism F - 4

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9509

Author : Mil'ner, A.S., Polyakova, N.L.
Inst : Not given
Title : The Curie Point in Thin Films of Ferromagnetics

Orig Pub : Uch. zap. kharkovsk. un-t, 1956, 64, 159-165

Abstract : An experimental verification is made of the dependence of the Curie point on the thickness of the nickel films, obtained by the method of spin waves, i.e., the dependence $I_s/I_0 = f(T/\Theta)$ is measured. Films are obtained by evaporation in vacuum on glass from a nickel wire or from a crucible made of aluminum oxide. The film area in all measurements was 27 x 2 cm, and the thickness was measured by the Sinel'nikov and Rapp method. The Curie point was measured from the relative change in the magnetic moment of the film upon increase in temperature. It was established

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USSR / Magnetism. Ferromagnetism F - 4

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9509

Abstract : that the Curie temperature is independent whether the nickel is coated on cold or hot glass. The irreversibility of the first magnetization curve, its dependence on the speed of heating, and the increase in the magnetic moment at room temperature for nickel films coated on cold glass leads to the conclusion that apparently these films are in an unstable phase. It is found that as the thickness of the nickel films is reduced from 6.95×10^{-6} to 1.17×10^{-6} cm, the value of the Curie temperature diminishes from 360 to 134^{0}. It is shown that even though the experimental points obtained do not fit the theoretical curve of Klein and Smith, the Curie point in thin nickel films is considerably reduced with diminishing thickness of the film, starting with 3×10^{-6} cm and below.

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SOV/58-59-10-22818

Translation from: Referativnyy Zhurnal, Fizika, 1959, Nr 10, p 145 (USSR)

AUTHORS: Mil'ner, A.S., Gamaley, K.Ya.

TITLE: The Initial Portion of the Fundamental Magnetization Curve of Aluminum-Nickel-3 Alloys

PERIODICAL: Uch. zap. Khar'kovsk. un-t, 1958, Vol 98, Tr. fiz. otd. fiz.-matem. fak., Vol 7, pp 275 - 279

ABSTRACT: In order to obtain additional information concerning the magnetic structure of Fe-Ni-Al alloys and the mechanism of their magnetization, the authors studied the initial slope of the magnetization curve of AlNi-3 alloys in fields from 0 to 200 oersteds. They measured the differential and reversible susceptibilities, which made it possible to clarify the boundary between the reversible portion of the magnetization curve and the beginning of its irreversible portion. Measurements were carried out on an astatic magnetometer. It is demonstrated that reversible magnetization processes extend up to fields of an order of 100 oersteds.

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SOV/58-59-10-22818

The Initial Portion of the Fundamental Magnetization Curve of Aluminum-Nickel-3 Alloys

The initial susceptibility, the coercive force, and the entire magnetization curve in these alloys are to a considerable extent determined by the energy of magnetic crystallographic anisotropy.

A.V.Z.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

SOV/126-7-6-4/24

AUTHORS: Mil'ner, A.S., Kovtun, Ye. F. and Popov, I. N.

TITLE: Magnetic Anomalies of Magnetite

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Nr 6, pp 832-836 (USSR)

ABSTRACT: Early work on magnetic properties of magnetite (Ref 1) showed that at 120°K there is a sudden decrease in magnetization, later found to coincide with sudden changes in other physical properties (Refs 2,3,4). The magnitude of the magnetization change depends on cooling conditions (Ref 7). Magnetic anisotropy changes with falling temperature (Ref 6). The object of the present work was to study the magnetic properties of magnetite at 75-100°K and the influence of change of sign of magnetic-anisotropy constants above the transition temperature on magnetic properties at lower temperatures. A natural rhombohedral magnetite single crystal and a magnetometer of the type described by Domenicali (Refs 7,8) were used. The whole swinging part of the magnetometer was kept in a vacuum (10^{-1} mm Hg) to avoid convection currents. The specimen whose axis coincided with the coil axis was

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cooled from room temperature to 75°K in an external field of about 400 oersted: Fig 2 shows curves of magnetization against temperature for various cooling conditions. Similar results but with less change in magnetization were obtained with the [111] axis along the coil axis. The authors give a graphical representation (Fig 3) of changes in magnetization with field commutation, which also applies to brief switching off of the field. In the previous work A. S. Mil'ner et al.(Ref 9) had dealt with the effect of temperature of application of the magnetic field on the value of the magnetization change, but with specimens with unknown crystallographic direction. In the present work the field was directed along the [100] or [111] directions, giving more regular results. Fig 4 shows plots of magnetization against temperature for [100] directed field applied at 290, 95, 90 and 85°K. The transition of the magnetite through the null value of the anisotropy constant had no effect on these phenomena (in contrast to what occurred when the field was commutated at 75°K for specimens cooled in a field). The authors explain the effect of the temperature of application of the field on

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the value of the magnetization jump below 100°K in terms of the nonuniformity of the stoichiometric composition of the specimen over its whole volume. Ye. S. Borovik participated in the discussion of results.
There are 4 figures and 10 references, 4 of which are Soviet, 3 French and 3 English.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet imeni A. M. Gor'kogo (Khar'kov State University imeni A.M.Gor'kiy)

SUBMITTED: April 1, 1958

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

BOROVIK, Yevgeniy Stanislavovich; MIL'NER, Abram Solomonovich; PINES, B.Ya., prof., otv.red.; VAYNBERG, D.A., red.; TROFIMENKO, A.S., tekhred.

[Lectures on ferromagnetism] Lektsii po ferromagnetizmu. Khar'kov, Izd-vo Khar'kovskogo gos.univ., 1960. 234 p. (MIRA 13:11)

(Ferromagnetism)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

PHASE I BOOK EXPLOITATION SOV/4893

Vsesoyuznoye soveshchaniye po fizike, fiziko-khimicheskim svoystvam ferritov i fizicheskim osnovam ikh primeneniya. 3d, Minsk, 1959

Ferrity; fizicheskiye i fiziko-khimicheskiye svoystva. Doklady (Ferrites; Physical and Physicochemical Properties. Reports) Minsk, Izd-vo AN BSSR, 1960. 655 p. Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Nauchnyy sovet po magnetizmu AN SSSR. Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR.

Editorial Board: Resp. Ed.: N. N. Sirota, Academician of the Academy of Sciences BSSR; K. P. Belov, Professor; Ye. I. Kondorskiy, Professor; K. M. Polivanov; Professor; R. V. Telesnin, Professor; G. A. Smolenskiy, Professor; N. N. Shol'ts, Candidate of Physical and Mathematical Sciences; E. M. Smolyarenko; and L. A. Bashkirov; Ed. of Publishing House: S. Kholyavskiy; Tech. Ed.: I. Volokhanovich.

PURPOSE: This book is intended for physicists, physical chemists, radio electronics engineers, and technical personnel engaged in the production and use of ferromagnetic materials. It may also be used by students in advanced courses in radio electronics, physics, and physical chemistry.

COVERAGE: The book contains reports presented at the Third All-Union Conference on Ferrites held in Minsk, Belorussian SSR. The reports deal with magnetic transformations, electrical and galvanomagnetic properties of ferrites, studies of the growth of ferrite single crystals, problems in the chemical and physicochemical analysis of ferrites, studies of ferrites having rectangular hysteresis loops and multicomponent ferrite systems exhibiting spontaneous rectangularity, problems in magnetic attraction, highly coercive ferrites, magnetic spectroscopy, ferromagnetic resonance, magneto-optics, physical principles of using ferrite components in electrical circuits, anisotropy of electrical and magnetic properties, etc. The Committee on Magnetism, AS USSR (S. V. Vonsovskiy, Chairman) organized the conference. References accompany individual articles.

Ferrites (Cont.) SOV/4893

Sirota, N. N., and E. Z. Katsnel'son. Temperature Dependence of the Magnetic Permeability of Nickel-Magnesium-Zinc Ferrites 242

Mishin, D. D., N. T. Plastun, and E. E. Adamovich. Temperature Magnetic Hysteresis in Nickel-Zinc Ferrites 249

Mishin, D. D., L. V. Nikonova, and T. I. Bychkova. The Effect of Omnilateral Compression and Temperature on the Magnetostatic Properties of Nickel-Zinc Ferrites 253

Kovtun, Ye. F., and A. S. Mil'ner. Magnetic Anomalies of Iron and Cobalt Ferrites 258

Sirota, N. N., and E. Z. Katsnel'son. On the Electrical Conductance of Nickel-Magnesium-Zinc Ferrites and Its Temperature Dependence 263

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, A. S.; TATARINOVA, L. I.

Electric and magnetic properties of nickel films deposited on glass. Fiz. met. i metalloved. 9 no.5:673-679 My '60.
(MIRA 14:4)

1. Khar'kovskiy gosudarstvennyy universitet imeni A. M. Gor'kogo
(Nickel—Magnetic properties)
(Metallic films)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

31598
S/048/61/025/012/002/022
B125/B112

24.2260

AUTHORS: Kovtun, Ye. F., and Mil'ner, A. S.

TITLE: Temperature dependence of magnetization of manganese ferrite in weak fields

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 12, 1961, 1437-1438

TEXT: For the purpose of comparing the processes in manganese ferrites with those in magnetite and cobalt ferrite, the temperature dependence of the magnetization of monocrystalline manganese ferrite between nitrogen and room temperature was measured with the use of a pendulum magnetometer in the following three cases: (1) Precooling the ferrite without magnetic field and raising the temperature from 80° to 280°K causes the magnetization to increase. (2) Precooling the ferrite in a magnetic field shows that magnetization at 80°K is higher than it is in the case mentioned under (1) and that it decreases steadily under heat action. (3) In case of precooling the ferrite in a field perpendicular to that applied during the magnetizing, magnetization shows the same behavior as in case (2).

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31598
S/048/61/025/012/002/022
B125/B112

Temperature dependence of ...

The values obtained at nitrogen and room temperature for the induction of a manganese ferrite by means of the ballistic method in a field of Helmholtz coils after cooling without field or after cooling in a field of 5 oe agree with results obtained by the magnetometer method. In (1) and (2) the temperature behaves under analogous conditions similar as in magnetite and cobalt ferrite, the magnetization of manganese ferrite does, however, change within a temperature interval considerable wider than that in the afore-mentioned cases. In the third case magnetization will always be increased by the field parallel or perpendicular to the magnetic field applied during the cooling. Contrary to this, the magnetization of magnetite and cobalt ferrite is diminished by applying a field. Hence the conversion of the energy spectrum of electrons in the low temperature range is more complex than that with magnetite. There are 1 figure and 10 references: 5 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: Domenicali C. A., Phys. Rev., 78, 459 (1950); Okamura, Simoizoka, Phys. Rev., 83, 664 (1951); Domenicali C. A., Rev. Scient. Instrum., 21, 327 (1950); Verwey E. et. al. J. Chem. Phys. 15, 181 (1947).

ASSOCIATION: Kharkovskiy gos. universitet im. A. M. Gor'kogo (Khar'kov State University imeni A. M. Gor'kiy)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

S/120/63/000/001/032/072
E032/E314

AUTHORS: Mil'ner, A.S., Litovchenko, T.A. and Tatarinova, L.N.

TITLE: Determination of the magnetic characteristics of thin ferromagnetic films

PERIODICAL: Pribory i tekhnika eksperimenta, no. 1, 1963, 131 - 132

TEXT: A torsion magnetometer is described for determination of magnetization curves and static hysteresis loops of ferromagnetic films in the temperature range 60 - 1 000 °K. The magnetometer is shown in Fig. 1. It consists of an evacuated glass or quartz tube 1 . A quartz rod 4 is attached to a phosphor-bronze suspension at one end and to a copper holder 3 at the other. The film under investigation is placed in this holder, while the suspension 5 is attached to the copper rod 6 which passes through the glass-to-metal seal 7 . A rigid copper frame 8 is firmly attached to the upper end of the quartz rod 4 with its plane perpendicular to the plane of the holder 3 . The mirror 10 is attached to this frame and is used to observe the rotation of the system. One end of the frame is soldered onto the

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lower end of the suspension 5 , while the other end of the frame is soldered to a copper wire which forms a thermocouple junction with a constantan wire 14 at the holder 3 . The other end of the constantan wire is taken up through the glass-to-metal seal, forming a spiral around the suspension 5 . The necessary temperature is produced by placing the lower part of the tube in an electrical heater or a dewar. Thus, two leads are sufficient to determine the magnetization of the film by passing a compensating current through the coil 8 , the temperature being measured by the thermocouple. Fig. 3 shows the hysteresis loop for 2 650 Å thick nickel film on a glass base. The experimental points are in satisfactory agreement with the theoretical curves. There are 3 figures.

ASSOCIATION: Khar'kovskiy gosudarstvonnyy universitet
(Khar'kov State University)

SUBMITTED: April 7, 1962

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Determination of the ....

S/120/63/000/001/032/072
E032/E314

Fig. 1:

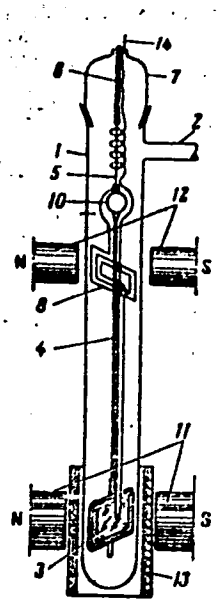
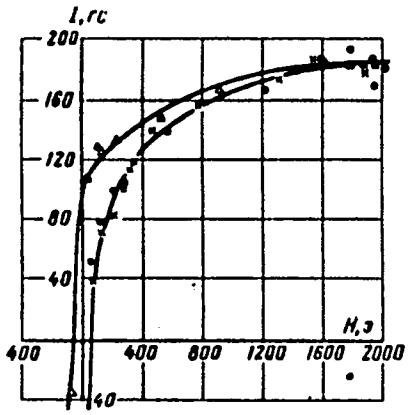


Fig. 3:



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ZALMANZON, Ye.S.; MIL'NER, B.I.; ROZENBAUM, G.I.; ITSELIS, F.G.

Suitability of various types of tissue culture for detecting poliomyelitis and other enteroviruses in the practical laboratory. Vop. virus. 6 no.6:750-754 N-D '61. (MIRA 15:2)

1. Gorodskaya sanitarno-epidemiologicheskaya stantsiya, Moskva.
(POLIOMYELITIS) (VIRUSES) (TISSUE CULTURE)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

NOSOV, S.D., prof.; LADODO, K.S., kand.med.nauk; KUZ'MINSKAYA, G.Ya.; NIKOLAYEVSKIY, G.P.; ITSELIS, F.G.; VINTOVSKINA, I.S.; KAGANOVICH, N.I., ZHUKOVA, L.D.; MIL'NER, B.I.; OSHEROVICH, A.M. PILATSKAYA, Ye.P.

Clinical epidemiological characteristics of certain viral infections in children's institutions. Pediatriia 39 no.4:6-13 Ap '61. (MIRA 14:4)

1. Iz otdela detskikh infektsii (zav. - prof. S.D. Nosov) Instituta pediatrii AMN SSSR i epidemiologicheskogo otdela (zav. - S.A. Samvelova) Moskovskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.

(VIRUS DISEASES)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

ITSELIS, F. G.; YAMPOL'SKAYA, E. I.; ZALANZON, Ye. S.; MIL'NER, B. I.; ROZENBAUM, G. I.; TALINSKAYA, A. F.

Focus of mixed diseases due to poliomyelitis and Coxsackie [viruses] in a children's collective. Pediatriia no.6:15-19 '62. (MIRA 15:6)

1. Iz sanitarno-epidemiologicheskoy stantsii Moskvy i Instituta pediatrii Ministerstva zdravookhraneniya RSFSR.

(POLIOMYELITIS) (COXSACKIE VIRUSES)

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MIL'NER, B.P., inzhener (st.Ledeynaye Pole)

Using a crane for continuous changing of bridge girders. Zhel.dor. transp. 37 no.4:85 Ap '56. (MLRA 9:7)
(Railroad bridges)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, Bentsion Zakharovich; ANDRIANOV, I.I., inzh., retsenzent; VLASOV, B.V., kand. ekonom.nauk, red.; SEMENOVA, M.M., red. izd-va; CHERNOVA, Z.I., tekhn. red.

[Saving of labor in auxiliary work in the machinery industry; practice of machine shops] Ekonomiia truda na vspomogatel'nykh rabotakh v mashinostroenii; na primere mekhanicheskikh tsekhov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1961. 173 p. (MIRA 14:12)

(Machine-shop practice)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, B.Z., kand.ekon.nauk

Norms for repair work. Mashinostroitel' no.11:39-41 N '61. (MIRA 14:11)

(Machine tools--Maintenance and repair)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, B. Z., kand. ekon. nauk

Establishing technical norms for conveying operations in the machinery industry. Mashinostroitel' no.10:38-39 O '62. (MIRA 15:10)

(Machinery industry--Production standards)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, B.Z., kand.ekonomicheskikh nauk

Specialization in repairing. Vest.mashinostr. 42 no.8:77-78 Ag '62. (MIRA 15:8)

(Industrial equipment--Maintenance and repair)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, Bentsion Zakharovich; PETRUSHEV, I.M., red.; GERASIMOVA, Ye.S., tekhn. red.

[Improving the organization of industrial transportation] Sovershenstvovanie organizatsii promyshlennogo transporta. Moskva, Ekonomizdat, 1963. 183 p. (MIRA 16:3)
(Materials handling)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, Bentsion Zakharovich; KATASHOVA, R.I., red.; KARLOVA, L.V., tekhn. red.

[Establishing norms for production maintenance] Normirovanie rabot po obsluzhivaniiu proizvodstva. Moskva, Ekonomika, 1964. 184 p. (MIRA 17:3)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

MIL'NER, B.Z., kand.ekonom.nauk

Establishing norms for adjusting operations in the machinery industry. Mashinostroitel' no.3:36-38 Mr '64. (MIRA 17:4)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001134310

VLASOV, B.V., doktor ekonom.nauk,prof.; MIL'NER, B.Z.,kand.ekonom.nauk

Improve the equipment and organization of auxiliary production.
Vest.mashinostr. 44 no.7:3-6 Jl '64. (MIRA 17:9)

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